

R E M A R K S

Claim 1 was amended hereinabove to include a feature of previous claim 15.

New claim 29 contains features of claims 1 and 19.

New claim 30 recites the features of previous claims 15 and 16, and is dependent on new claim 29.

Applicants' present claim 1 concerns an ink for an ink jet comprising:

a color ink containing a solvent which is polymerizable in the presence of an acid and a colorant dispersed in the solvent, the solvent comprising an oxetane compound having an oxetane group and;

a reaction liquid containing a photo-acid generating agent which is capable of generating an acid when it is irradiated with light and prepared separately from the color ink, the reaction liquid being preserved separately from the color ink, the color ink and the reaction liquid being mixed together immediately before being introduced into an ink jet type recording head.

Applicants' present claim 29 is directed to an ink for an ink jet comprising:

a color ink containing a solvent which is polymerizable in the presence of an acid and a colorant dispersed in the solvent, the solvent comprising a low viscosity compound having a viscosity of 1 cP to 30 cP and a high viscosity compound having a viscosity of 20 cP to 500 cP; and

a reaction liquid containing a photo-acid generating agent which is capable of generating an acid when it is irradiated with light and prepared separately from the color ink, the reaction liquid being preserved separately from the color ink, the color ink and the reaction liquid being mixed together immediately before being introduced into an ink jet type recording head.

Claims 1, 2, 11 to 14, 17, 18 and 23 to 28 were rejected under 35 USC 102 as being anticipated by EP 779346 and USP 5,641,346 to Mantell et al. for the reasons set forth in item no. 7 on page 5 of the June 29, 2007 Office Action.

Claims 15, 16 and 19 to 22 were not included in this rejection.

The inclusion of the features of applicants' claim 15 into claim 1 in and of itself should serve to avoid the 35 USC 102

rejection. Also, new claim 29, which includes features of claim 1 and the features of claim 29, should not be anticipated by Mantell et al.

Withdrawal of the 35 USC 102 rejection is thus respectfully requested.

Claims 1, 2 and 11 to 28 were rejected under 35 USC 103 as being unpatentable over EP 1 357 159 and USP 6,959,986 to Ushirogouchi et al. in view of EP 779346 and USP 5,641,346 to Mantell et al. for the reasons set forth in item no. 5 on pages 3 to 4 of the June 29, 2007 Office Action.

It was admitted in the June 29, 2007 Office Action that Ushirogouchi et al. do not expressly teach preparing and preserving the photo-acid generating compound as a separate solution. Advantageous results for separately preserving the reaction liquid and the color ink are seen by the results set forth in Table 2 on page 75 of the present specification, which is reproduced hereinbelow.

Table 2

Sample No.	Pencil hardness	Curing property	Preservation	
			Preserved separately	Preserved as a mixture
1	<2B	x	o	o
2	HB	Δ	o	o
3	H	o	o	Δ
4	H	o	o	x
5	H	o	o	x
6	H	o	o	x
7	H	o	x	x

The shelf life was evaluated on two different kinds of ink, i.e., one where the first solution and the second solution were separately preserved, the other where these two solutions were mixed together and then preserved.

o: less than 20%

Δ: 20% to less than 25%

x: 25% or more, or deposit generated.

With respect to the pencil hardness, samples exhibiting H or more were assessed as acceptable, and with respect to the shelf life, samples exhibiting Δ or more were assessed as a practically useful level.

As shown in the above Table 2, in the case where the ink was preserved subsequent to the mixing of the first and second solutions, the mixing ratio of the photo-acid generating agent is required to fall within the range of 2 to 4% in order to secure a practically acceptable curing property and shelf life. Whereas in the case where the first and second solutions were separately preserved, even if the photo-acid generating agent is added at a mixing ratio ranging from 2 to 20%, it is possible to secure a practically acceptable curing property and shelf life.

Attention is directed to the following paragraph from page 80, lines 15 to 25 of the present specification, which sets forth features and results of applicants' claims that are not taught or suggested by Ushirogouchi et al.:

"It will be recognized from these results [FIG. 3] that as long as the photo-acid generating agent and the polymerizable compound which can be polymerized in the presence of an acid are separately preserved and both components are mixed together to form a recording ink immediately before the formation of an image, thus enabling the ink to be discharged from an ink jet

recording head, it is possible to constantly deliver a recording ink having a stabilized viscosity to the ink jet recording head, thereby making it possible to obtain stabilized printing characteristics."

The desirable results of applicants' present claims, which are described above, cannot be obtained from the disclosure of Ushirogouchi et al.

As is described on page 4, line 26 to page 5, line 1 of the present specification (which is reproduced hereinbelow)), the photo-cationic curing type inks for an ink jet are poor in shelf life and hence short in useful life:

"Photo-cationic curing type inks for ink-jet containing an oxirane group-containing compound, an oxetane ring-containing compound, a vinylether compound a pigment, a pigment-dispersing agent, photo-acid generating agent and other additives are liable to indicate a great magnitude of fluctuation in viscosity (increase in viscosity) with time due to the dark reaction of the inks for an ink jet which would take place quite prominently. Therefore, the photo-cationic curing type inks for an ink jet are poor in shelf life and hence short in useful life."

In contrast to the above, the ink of the present claims is excellent in shelf life and capable of reliably obtaining high-quality printed matter, with excellent reproducibility.

Applicants' present claims thus afford significant desirable results over Ushirogouchi et al.

Since Mantell et al. do not teach or suggest the color ink and reaction liquid recited in applicants' claims, it is respectfully submitted that one of ordinary skill in the art would not consider combining the disclosures of Mantell et al and Ushirogouchi et al.

Enclosed is an English-language translation of applicants' priority application (JP 2003-319841 filed September 11, 2003). Applicants have thus perfected their claim for priority under 35 USC 119. The filing date of JP 2003-319841 is before the October 29, 2003 publication date of EP 1357159, thus removing EP 1357159 as a reference.

USP 6,959,986 and the above-identified application are both assigned to the same assignees (Toshiba Tec Kabushiki Kaisha and Kabushiki Kaisha Toshiba). Applicants have informed the undersigned that at the time the presently claimed invention was made, the present application and USP 6,959,986 were commonly owned. Accordingly, USP 6,959,986 should not preclude patentability of the present claims under 35 USC 103(c)(i).

Withdrawal of the 35 USC 103 rejection is thus respectfully requested.

Reconsideration is requested. Allowance is solicited.

Appln. No. 10/899,642
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If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned at the telephone number given below for prompt action.

Respectfully submitted,



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Enclosure: English-language translation of EP 1357159